

8R-

733-740

Smooth yellowish under
shrub

8R = P

Possibly "N. pallidiventer" of Fyles. Gregarious
on willow (S.) at Bluff Point
Hattisburgh Aug. 24 1897. A slight odor
just like water melon or, in open air,
occasionally any smell.

Hds 1.6-1.8 round, shining black. Ocelli
light green not shiny; joint 2 acc. yd-
brown, no marks. Segs 8 annulate with

distinct black tubercle lat.

and on sv. Hds as in fig.

A row of annulet black spots
sd and before sv marks.

feet pale, thoracic with large
black patch at base and black
claw. Quadrate black anal plate.

spots fainter post. Anal group, black
no ventral glands. A faint annulet
spotted blackish d. line. Feet 6-11, 13.

Sept 1. Same without shedding

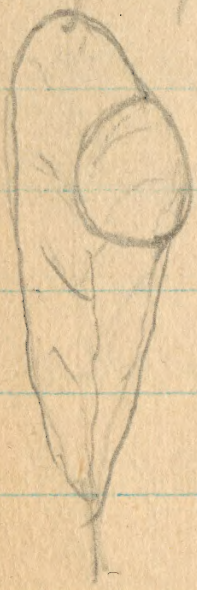
Chut

1882/8 Nov. 7

Pontania n. sp. near fragilis

8 S

Galls on Salix purpurea Plattburgh N.Y.
Aug 27 1897. Solitary, smooth, exceeding
edge of leaf, from midrib to beyond
margin and at varying distance
from base; not evenly divided by
leaf, $\frac{1}{3}$ above, $\frac{2}{3}$ below; elongated



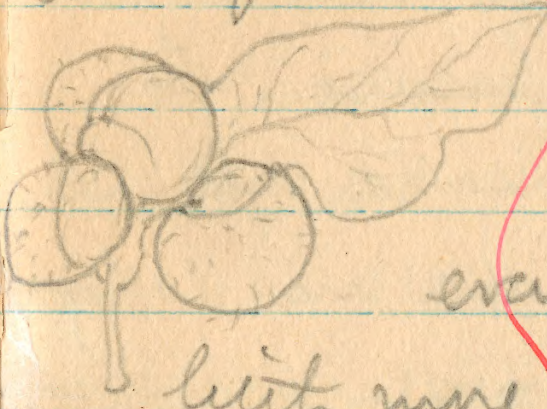
pyriform or rounded, a few
corky dots. Greenish, strongly
red shaded especially above. L 8-9;
w $6 \pm$ height $5 \pm$ mm. Thick, fleshy, the
meat white with pink line.

Larva 6 all white, eye and mouth black.
Hd 1.0 whitish, a dusky shade above, eye
black, mouth brown. Body all white, waxy,
not shining, segs obscurely 5 annulate and
a little blackish shaded in the folds. Thor.
feet rather large, colorless, abd. 6-11, also
distinct slender. Body uniform, 2-v folds
somewhat prominent, 13 tapering. L $6\frac{1}{2}$ mm.
Out of gall Sept. 17. Out March 25 1898

Pontania n. sp. near pusillum

8 T

Galls with 8 S but gregarious, hairy
and spherical. Near base of leaf, 3, 2 or
rarely one, exceeding margin
often $\frac{1}{2}$ diameter. Not



evenly divided by leaf, $\frac{1}{3}$ or a
little more above, about $\frac{2}{3}$ below. Pale
greenish, often heavily marked & mottled
with red above, pale below, rarely uniform,
pale. Strongly sickly hairy like other
leaves below, less hairy or even smooth
above. $8.5 \times 8.5 \times 7$ mm or down to
5 mm diameter. Fleshy, meat strongly
pink streaked.

Larva 9 all white, eye & mouth black, body
annulate, with large concolorous tubercle
joint 13 tapering.

Out March 31 1898

shed skins of last stage are fine, hard, unspotted
 9 sh. hd 2.40 mm. Out June 4 1898

♀ 2E Harpiphora varicornis Nutt

8U = 2E

From Dr. E. F. Love, taken at Yorkers
 Aug. 27 1897. Reached me Aug. 31 in
 swimming jacket and anxious to
 be in word. Foot like button ball bush.
 (Swimming jacket) Hds black 2.4 ± mm. Body
 ochre yellow sr and feet 6-13 d. to
 spiracles slightly bluish yellow bearing
 black spotted; no bloom; anal plate
 black. Spots large, 2 sd and one lat.
 per seg. sd annulets 1-3, 5-6 ant; but no
 annulets 1-5. Segs not very distinctly
 6 annulate. 2 narrowly yellow in
 front. a narrow raised collar-like
 ridge on joint 13 ant. (Annulet 4 pale)
 Spiracle on pale annulet 4. [Doubtless annulet
 counter wrong. Did not want to kill any.]



Sketches looks so

Dr Love sent more Sept 10. Hds 2.5
 2.3 on Cornus (had stemmed) large leaves
 ant. annulet 2 and 4th of 13 high ant
 collar, that of 2. Hatched in dorsal
 line. Hd anal plate shiny black.
 much pale all over creamy ochre or
 greenish ochre. perfect immaculate yellow
 brown spiracles and dark dorsal shield
 all with hd covered with thick white bloom
 but not woolly. Segs strong 6 annulate
 feet 6-13, thick, translucent, all pale
 bloom reaching to 5-6 folds of legi shading to
 mass of ultimate stage are seen through

8V

8-8 4/99

= 8V? on Cornus alternifolia Yaphank
 L.I. Aug. 31 1897. Gregarious on back
 of leaf, curled but can flap up body
 all together when disturbed.
 Hds. 2.3 ± black, mouth yellow, a slight
 woolly bloom. Body yellow sr and narrowly
 2 ant, d. to spiracle whitish, with 2 per seg.
 sd and one large lat. black spots, obscure
 connective into a square marking, leaving
 annulet 2 and 4 pale. Spots sd on 5, 6, 1 and
 3, 4; lat on 6, 1, 2. Segs 6 annulate. Anal pl.
 black, 13 collared in front. Feet 6-13 all
 pale, 2 slightly collared ant. Spiracle annulet 2.
 Hd 2 greenish white d, yellow 2 ant & s-v
 Hd, anal pl. black base of sd black spots
 faint, clouded, small, or faint distinct with
 a good white bloom over all, head too.
 Hd 1.5 Hd. anal pl. black. Same but spots only
 the faintest trace and all obscured by
 a heavy white bloom.
 Hd 1.2 White bloom in black but lat. and
 anal plate.
 Hd 3 (ultimate) Hds. 1.5, 2.0, 2.3 very

shining, rounded, recalling snakes.
 Hd. jet black. Body bright ochre s-v, feet
 and 2 anteriorly. Dorsum to spiracle
 light blue on annulet 2 and 4, on 4
 clear down, on 2 up to middle of side.
 Other annulets including collar of 13
 and whole of 14 dorsally deep blue black
 forming disconnected black parallelogram
 centered and separated by pale blue.

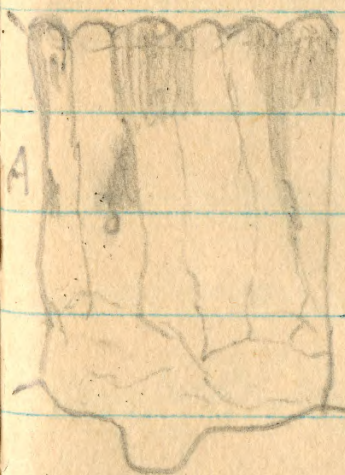
Oct June 25 1898

Fly like H. tarsatus (60) but hind
 knees a little blacker.

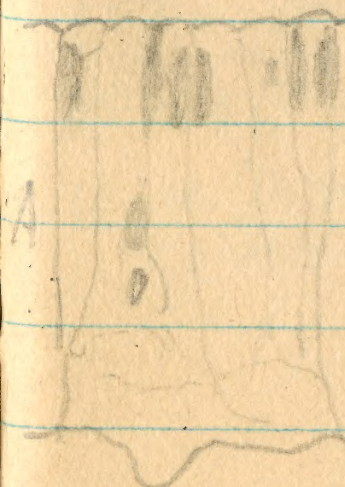
Harpiphorus tarsatus Say

8W = 60

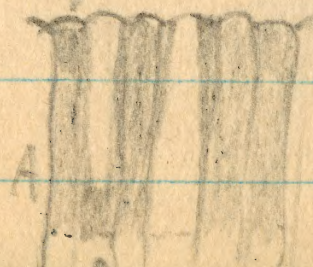
From Jentel (locality? said an "ornithom" but
 none in can and ate Corvus) No bloom. Hd
 black, shiny 2.8 mm. Anal plate black
 2 ant. and s-v below spiracle ochre yellow.
 Dorsum leader blue greenish, under lens
 dotted with fat granules in the 6 coarse
 annulets. Blotched with black in
 mm or less ill defined spots, a large
 d. row, 2 per seg. ^{not or} hardly dissected on
 dorsal line and a small



lateral spot. Dorsal vessel
 dark. Patches blotched, varying
 feet 6-13, tho. moderate. No
 distinct collars.



Left 18 (ultimate) Like 60.
 2 ant, s-v ochre. Dorsum blue
 black, annulet 2 to just above
 spiracle and all of 4 blue gray.



Oct July 7 1898

8X

Shiny sticky slug on Quercus tinctoria
 Seelyport L.I. Sept. 17 1897. Thorax,
 black, abd. tapering behind, feet 6-12.
 Shiny translucent, tinged with orange
 throughout, darkest on anterior edge
 of 2 overhanging head. Hd pale, oblique
 retracted, eye black, w. 9 mm very
 shiny, sticky, a little solid; feet
 plainly by transparency, green. Solitary
 on upper side of leaf, pumping little
 froth.

Ultimate larva, not shiny, all orange
 tinted, slightly hairy streaked transverse.
 Ant. and of 2 dark orange. Feet dark feet.

8Y

^{underside of leaf}

Slugg on live oak below Armadillo
 Fla., Jan 16 1898. Head high, oval, shiny
 black. 1.1 mm. over $\frac{1}{2}$ wide 2. Not shiny
 by transparency. Thorax widened at the
 sides. Flanged. Body rather black, smaller
 just., all transparent, very shiny sticky.
 The feet all black, all small 6-13, pale.
 Body above a little whitish, feet green.
 Broken at 2 and 12; sides of thorax and
 s.v. region to 12 just. shaded with orange.
 Tracheae white. Pumping vigorously. 10 mm
Dampier 7 All whitish caramel, eyes brown,
 not shiny, 6-annulate, large annulets
 centrally, small in incisures, i.e. 3rd
 large. No black; all yellow tinged,
 most strongly on sides of thorax.
Ant Oct 16 1898

Out fall 1898 but spoiled 920 8/8
-prattin?
joints

9A Neodipiron dyari

8? eggs in 2-needled pine Roslyn Va
April 3 1898. Took some and marked trees
Laid in the edge of the needle near the
tip 2 to 4 all on same side, separate
by 3 or 4 times their own length, swollen,
whitish, the edge of egg exposed is slit.
Elliptical, 2x as long as wide and occupying
1/2 the width of the needle. Smooth slightly
yellowish, the leaf discolored to near sum-
mit for a minute area around.

Hatched Apr 7 and got in a bunch at end of
needle. Hd rounder, higher than wide, shiny
jet black w. 5 abut. Two feet large & spindly
black; body slender, tapering with small
distinct abd. feet 6-13; segs. finely annulate,
dull blackish obnoxious, pale s-r and on
feet. No marks. About 6 annulate later whitish
green, blackish only faint in seg. measures.

Shed Apr 12 Hds. 7 shiny water, black, higher
than wide. Segs. finely annulate with numerous

Nov 1910

Robur

minute black points, yellowish green,
slightly shaded darker in a geminate d.
line & a more distinct lateral one.

The feet black, green in joints; abd feet 6-12
13, short but very functional. Whisker things
gregarious. Segs 5 or 6 annulate(?) and at
least 4 rows of joints per seg. (hard to see)

Shed Apr 15 Hds 1.2 & the feet shiny black.
Body whitish yellow, ended, a distinct
addorsal & lateral blackish green shade
2 feet - 13. 3 rows of black shiny joints per seg.
on 1, 2, 4 of the fine indistinct 6 annulate.
Many also on anal flap & s-r folds.

Dorsal vessel lines with yellow membrane
Shed Apr 19 Hds 1.4 with the feet shiny black.
Segs 6 annulate black joints distinct & numer-
ous on 1, 2, 4. Body greenish yellow, smoky
brown s-r & abd. bands not nearly out
end of 2 but covering anal flap, varying in
distribution in different specimens.
Variable, faint or heavily marked. Anal

Some exactly = 7T

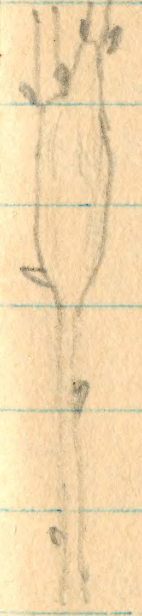
Larvae never white, always yellowish
spots scarcely quadrate, rather irregular
plate most distal markings, 2 dark
shaded large patches. sd or lateral
stripe most distinct or only sd present.
In one a broken S-V stripe along lower
S-V folds. In this stripe nearly black and
anal plate solidly shaded.

Shed Apr 22 Hds 1.8 Hd shiny black.
the feet black, abd. 6-12, 13. Body mod-
erately thick, uniform; seg 6 annulate
black setae very minute. Body yellowish
a broad distinct black sd stripe, varying
grad. & joining two large continuous spots
on anal flap. a lat. row of spots
1 per seg (annulets ²⁻⁴), narrow black
spots at bases of abd feet (lower S-V fold)
forming almost a continuous line.

Another sd & lat. bands both solid &
black, black dashes above the ruffe & on
lower S-V folds. Upper S-V fold more yellowish
Apr 25 (Swimming jacket) Hd whitish, smooth

lined, eye black 1.4. Seg 6. Setae 1-2-4 fine
Body solid pale yellowish all smooth
lined, sd & lat. bands smooth black
broken, all a little waxy. The feet pale
anal patches smooth black addorsal a
narrow, representing upper edge of sd band
Spring Apr 26

9B

Last year, Emma falls on a slender stem
lanky willow growing on edge of a gulch,
Rushyrun Va. April 18 1898. In the
main stem below origin of a branch
 in the middle of years growth, char-
acteristic elliptical 20x7 mm, a
woody swelling of twig 3x diameter
of stem same color as bark or a
trifle greenish. Cavity almost size of
larva, ^{analogous to hole length of gall} stem elliptical, divided with a little
humid silk. Empty or with pupae.

Pinus virginiana

Bred
Mar 9 1900
←

Apr 22 1898

9C

Brought in a pine for 9A and found wriggling in jar
after several days. Found one sign of eating.

Larva like but no anal prongs. Had small
faint brownish ed. around mouth. Nearly
white, eye very small, black, antennae
distinct, quite long. W. about 4 mm.

Body subcylindrical, venter a little flattened
d-v fold moderate, distinct. 7th feet
short and anal functionless; abdominal
marking. Segs obscurely 3-annulate
anal plate 3 rounded a little pointed
slightly projecting and a little brownish
carnified, smooth, sloping, a little
ridged before it on 13 trans. There is a
little thickened, the whole body quite
white. all opaque white, waxy, no
marks. Length 4 1/2 mm. (wiggled and but
fell off leaves. Apparently full fed and empty)
white fat attaches to stomach under back & just
as same wiggles. More inside young of
flavor of 2 needled pine, 1 in a flower
coming out before same blossoms.

Eat out a portion making the flower
feel soft to touch. ^{Other no sign till came out}

Doubtless *Xyela minor* Nutt.

staminate
armenta

Pteronotus mendicus

9D = 3B

Egg and I on melons (thoroughly dry shorts by water)
Anacostia D.C. May 12 1898. Egg D servient

Saw cut under upper epidermis 1.5 x .7 mm
near edge of leaf ^{2 towards tip} solitary. Egg clear water
1.4 x .6, soft, somewhat irregular in shape

Leaf slightly depressed & egg forming a slight
prominence below but green and not swollen

Leaf green after hatching, below as before, above
the darker fibrous membrane. Larva begins
eating a round hole in leaf, sitting on edge

of hole. Hd. 3 ± pale greenish brown, eye black,
7th feet large, black, abd very small, 6-11.

Segs faint 4 annulate smooth, reddish green, not
shiny. Small anal plate and distinct blunt
prong black. No marks. Sit S-shape, wiggles.

Another May 13 Hd 6 ^(See ad 34) pale greenish, a brown stripe
on median suture and red from eye, eye

black. Body reddish green, blunt pale green
the feet pale, faint black marked at base

anal pl. colorless, but prongs black. Segs irregular
in distinct 3-annulate. no setae feet 6-11

Thurs May 15 Hd 1.15 green a brown cloud of fine
eye and a center of head; eye black mouth
brown. Body green, creased, showing annulate
no. anther, anal pump dusky, feet pale.

Thurs May 17 Hd 1.4 green a blackish streak
a vertex a fine eye. Body clear green
from head, smooth; scarcely annulate,
feet 6-11; held down to leaf; anal
pump distinct dusky. Scattered pale
sd feet, having dorsal a shade darker,
its edges slightly defined & the feet.

One from May 18 hd 1.15 1 trunk and 7
The 1.4 mm body are 16 mm long and
still eating. Thin yellow cocoon.

Big one opening May 20

Out May 25 1898 ♀

9E

On Clethra alnifolia Southaven L.I.
Not mat. and not seen to feed (cf. Poe-
cilonema inferentia) Hd. whitish with
slight brown, eye narrowly black.
w 1.3 mm. Cylindrical, slender, sitting
on venter on back of leaf, feet 6-13
all neat light green, immaculate,
a slight white brown which forms
a distinct white sd band on each
side. Segs nearly 6-annulate. Spread
minute, dark.

Emerging perfect June 24. All away pale
green, head whitish, eye black, hd
shiny. Segs finely annulate. No marks

~~9E~~ 9E Out Apr 26 1899

Pocilonema inferentia ♀

Found May 22. 1899
Phosphorus irregularis n/s
an *C. aequalis* n/s? $F = N$

Flat on venter, irregularly shaped on
side back and more elongated. Hair
W. H. on smooth willow twig. 28 1898
Hd black. Body rather flat, feet 0-11
13. Many white hairs. Some irregular
markings & 2 brown rows. Ant. row of hair
marked. Feet row coarse and few
longer bristles. Translucent
a little green from food, 2-3 and 11-12
orange yellow. A row of large black
sd spots 2-12 over the front row of
hair; anal plate black, large.
Warts perfectly concolorous, transparent.
Laid a trace of a small black dot 5-6
Tracheal line white. Feet colorless.
Hair all white, recurved. Hd 1.5 mm
Later sd spots very large. 5-6 small &
absent. Segs 3 annulate, ant. annulate
with very few or no hairs. Spots 3-12
& anal plate black, white fur of. except
at vertex

10 A

Lyda? egg on blue beech, Cabin John, Md.
Apr 30 1899. Cylindrical, ends rounded
smooth, slightly shiny, white with strong
blue green tusk, opaque 1.8, width .6 mm
Hatched May 3, cut a slit and rolled a part of
leaf with slight web. Hd round, white, eye black,
mouth brown, w. .53 mm. Antennae about 6 before
reaches leg, jointed. Body whitish, translucent,
anal stylet long, similar to antennae, not colored
and jointed distally, rounded, whitish.
Shed May 5 Hd .7 shiny, translucent, brown tinted, eye
black, mouth brown. Body reaching transverse
a little whitish, shiny, no marks, legs 4 annulate
the feet, antennae and stylet whitish.
Shed May 7 Hd 1.1 pale whitish brown, shiny, translucent
eye black, joint brown, ant. joints about 6-jointed
of colorless, translucent, a little whitish not
observing the green food. A narrow black line
a c-sh ant and one before foot of joint 2. no
other marks. anal plate and pump all pale.
[died]

10 B

Lysid? eggs on willow catkin John, Wed
Apr 30 1899. Like 10 A but several together
a separate leaves but all at end of same
shoot. Cylindrical, ends rounded, pale
yellowish white, slightly shiny 1.4 x .4 mm
Hatched but would not feed.

10 C

Simulate hole of just like the *Schizocera*
prunivora but on *Viburnum* *terrestris* at
Cabin John bridge, Md. May 7 1899.

Hd. 6 prominent, round, green, eye black, mouth brown
antenna very short obscure. Body green, segs, black,
3-annulate, 13 annule, 4 joints and protruding
feet below shiny, legs blackish annule at base
of thoracic feet. seg pale, abd. segs very small.

Hd. 4 faint, brownish green, eye black. Body clear green
feet a little testaceous with distinct black marks at
base. segs all green, clear, annulate, abd. segs very small.

Hd. 9 prominent, rounded, green, faint brownish, eye
black; antennae rudimentary, a more distinct
but smaller than ocellus, colorless. Body clear
green, transparent, 3-annulate, smooth with a
5-6 ridge, no perceptible hairs and plate
square with 2 points, 2 points at side of arms,
and feet protruding, segs all very short 6-11.
a faint testaceous shade at base of the feet but
body all without marks. D. vessel obscure
distinct, tracheal line narrow and obscure.

May 7 Hd. 1.1 all clear green, eye black, upper
anal purple testaceous. just spiracular glands
present, green. Hd. shape and antennae rudimentary
base of the feet testaceous tinged. abd 6-11, 3 very small
spiracles black rimmed.

May 9 Hd. 1.4 Green clear, but faint testaceous
in the lobes, eye black markedly, antennae only
a scar. This flat testaceous at tip and a
shade above base. Segs in distinct 3-annulate
smooth, no marks, all as before, and plate
joints and same above arms shown. Short pro-
jecting below even green. Seg. glands colorless.
Late testaceous practically pure, legs all green.

May 11 Spun cocoon of brownish yellow with
reticulation.

10 D

Little edge feeding mounted on *Carpinus* *Calan*
John end. May eating a hole in middle of
leaf body curved S-shape. Hd. smoky testaceous,
a dark lat. shade, eye black, shiny; w. 4 mm
body translucent whitish, fringed annulate (about 3.)
shiny. feet green, anal seg. swollen, feet 6-11, 13
not used. May 9 Hd. 7 whitish slightly testaceous,
eye black, mouth & shade polished. Body colorless,
the feet green, finely annulate, 13 enlarged
feet 6-11 small. Antennae rudimentary joints.
May 12 Hd 1.0 rounded greenish shiny, a black
shade on each side and on clypeus. No
venter eye black, rudimentary antennae dark.
Body translucent green, fringed 6-11 annulate
the feet clear with black marks at the base
abd. feet short 6-11, 13 swollen with a pair
of thick, swollen tipped clear anal prongs
Tracheal line or dorsal vessel not contracted
May 14 Hd 1.3 pale brownish green, a black shield
behind ocellus, and a line on venter joint.
No rather obscure 6-annulate transverse green
a dorsal not shiny at all. Tracheal line fine
feet 6-11 distinct, small, 12-13 a little enlarged,
the bulbous prongs brown at tip. The feet clear
testaceous at base. Antennae rudimentary, not jointed.
Died = *Pteronotus strygae* Mord?

733

Four codes on beech and black oak Roslyn
Pa. Aug. 6, 1898. May be *fasciola* but to make
sure follow each.

733 A Elliptical, long, narrowing behind, ridges
well marked with setae and pale 2^d
spines. Skin finely shagreened granular
all over, depressed spaces not distinct
shed Aug 9 well 2^d spined *fasciola*
tapering behind. Stage III.
shed Aug 12 (to joint)

Aug 6	1.5	cat
" 7	1.6	"
" 8	"	5th
" 9	1.7	cut
" 10	2.0	"
" 11	2.1	5th
" 12	"	"
" 13	2.3	cat
" 14	2.5	steel
" 15	3.0	cat

733 B Skin all fine shagreened granular, the
 2^d spines numerous on lat. ridge,
 less so on 2^d ridge, and a very few
 slender ones in d. space. Fine granules
 all over, the depressed spaces hollow
 only, separations well marked (fasciola)
 Shed Aug 8 Like fasciola III
 (to front)

Aug 6	1.8	well
" 7	2.2	eat
" 8	2.2	to shed
" 9	2.2	eat
" 10	2.6	"
" 11	2.7	"
" 12	2.6	still
" 13	"	"
" 14	2.7	eat
" 15	3.0	"

733 C Shape of fasciola, tail quadrate. Ridges
 low, tuberculate. All fine frosted
 shagreened granular, space not
 differentiated. Ridges bear setae, and
 2^d spines most numerous on lat. ridge.
 Shed Aug 8 Like fasciola III. The
 seg. incisions show neatly.
 Shed Aug 2 Like fasciola but no marks
 whitish green from blood, rather
 broad in d. space, tail square.
 No 2^d line nor rings. Skin as fasciola
 (to front)

Aug 6	2.2	to shed
" 7	"	"
" 8	"	"
" 9	2.9	eat
" 10	2.8	to shed
" 11	"	"
" 12	2.9	still
" 13	3.3	eat
" 14	3.1	"
" 15	3.7	"

733D Like T. fasciola IV. Fine shagreen granules mixed with the much larger conical 2^d spines which are the real normal granules.

Aug 6	3.0	ly hila
" 7	3.3	white
" 8	4.0	cat
" 9	4.3	"
" 10	4.2	to shed
" 11	"	"
" 12	4.3	cat

The shagreen is much too fine being like that of young Nasoni and Textura.

733E
 Aug 7 2.6 both
 " 8 2.5 "
 " 9 2.9 cat
 " 10 3.2 "
 " 11 3.1 to shed
 " 12 " "
 " 13 3.7 cat
 " 14 4.3 "
 " 15 4.1 "

Box matches on black waxy 7. Same 2^d spines on both ridges. [also a 4.9 to shed regular stage V fasciola on chestnut]

= fasciola (to protel)

More pink creek D.B. Sept 10 1900, not fully grown. Lots of young.
 Aug July 14 1901. Carama cincta Cat 17476
 734 July 14

Pyronophids on red-bird (Ceruus canadensis)
 Roanoke, Va. Aug 6. 1195. All (50-60) are short but separated, scattered over the backs of successive leaves. Leaf near tip had a waxy mass of egg covering. Hds. 6 ± small shiny testaceous; mouth darker 3 with 4 warts 4-13 with three. Hair sparse, bristly pale, mixed with long soft white ones. Body deep black 5-11 to ② shading into dark red-brown 3-4 and 12-13. 5-r region pale yellowish and all the warts contrasting pale yellow. Long pointed glands behind the spiracles. Interspersed d. and lat. white glandular spots. Thrice flattened; 2 hood-like with no warts on it but hairy. Skin finely clear granular. Spines have tubercular colorless bases. Feet short & small. Venter

Shed Aug 8 Hds. 8 ± The soft curving white hair form a halo all around for 3 mm. The stiff hairs are short. Color the same. The

Sept 4 last held to J.

stiff hairs are pointed, smooth, with large bases but not bulbous or cross-banded; the long hairs are finely feathery barbed beyond the smooth basal part. Skin fine granular. D. color ends above warts III, waves, down joints in the incisures. D. & lat. whitish spots around the glandular dots. Head and anal tip yellow.

Shed Aug 14 *Pygmaephorid* shape. Hd $1\frac{1}{2}$ Body pale yellow s-v. head, anal tip and warts with a circular area around each. On 3-5, 12-13 deep brown-red d. to ③ shaded, arising close to the warts. On 6-11 deep black, cut by the round holes surrounding warts ① and incised by semi-circular holes for warts ②; not reaching below. Depressed spaces (1) and (4) large, white. No warts on joint 2. A yellow papilla by each spiracle, 4 warts on thorax 3 on abd. segs. including 13. A few hairs on feet base. Hairs of 2 kinds, short & spiny, long and feathery but very fine all as before. Feet short, normal.

Shed Aug 18 Hd $1.5\pm$ The same. red 3-4 12-13 black 5-11
 Shed Aug 26 Hd $2.0\pm$ Same. Hair 12 mm. 17-18 white
 as dorsal seg. spots also present small. Short hairs have large cones for bases. Has hairless feet up to 5/1.

Sept 18 1905

735

Adoneta sp? found & found at Glen-dale? L. J. Sept. 1898. Like

Sept. 9	12.5	eat	<i>Spinulode</i> but narrower,
" 10	13.0	"	less slender at 5; horns of
" 11	13.0	"	13 long, predominant over
" 12	"	"	12 which also exceed 11.

Widening of d. purple

band all subequal, 5 widening each practically alike, no pushing out of horns of 6 and 7. Callosities reduced on ant. side horns, but seg. only well developed on 12 and 13. (See paper) The color of dorsal band is a bluish purple from *Spinulode*, less red-dish or maroon.

736

Schizura very near *unicornis* from
 Wm. Beutenmüller Sept. 16, 1898
 Hd light brown, reticulate with dark
 with straight fulvous-brown rather broad
 vertical bands. Hump a 5 short,
 punctate, 12 high as a low hump.
 Side 3-4 green, brown dotted; rest red
 brown, dotted & mottled. A faint narrow
 lat. line pale below but all the
 region from iii to feet uniformly marked
 lines. D. a little chocolate shaded
 5-8 slightly pinkish and showing a
 trace of the V-mark on 10 as a light
 lighter mottling. 12-13 dark d. the
 tubercle light. Feet concolorous.
 ate wild cherry.

Spun Sept 17

737

Butterfly larva running in the
 road, Park, Washington D.C.

Sept 27, 1898. Spine hd short; scales
 any on 2¹; 5 on 3-4; 6 on 5-12 i.e.
 meeting p. sd, lat. substy, 2 s-v in
 line, one 11, none 12; 2 in line 13
 Body black, yellow dotted; an
 adducal diffuse broken yellow band
 Large orange spots around base of ③
 ④ breaking narrow lat. and substy
 pale yellow lines. Spine blue black
 except 2 s-v on 2 and the lower pair
 3-11. Hd rough, black on face, neck
 orange both on hd behind and 2 in
 front.

Spun trip to J at once.

Ant lat. b. *Jumina cocinea*

black line in st. suture of head
Blower for coll. S. tubatony

738 = 447

Noctuid egg on back of willow leaf. Colbr
John Wd April 30 1899. Circular, flattened
48± ribs diminishing by intercalation
thick, flattened, marked by cross striae. Slightly
shiny, translucent whitish. D. .6 h. .4
Hatched May 3 and eat greenish in midrib.

Hd annular, bilobed, shiny whitish, join brown
ocelli 6, black, distinct; ant. 4 on body slender
whitish green from food, feet 7-8 annular.
Setae normal, 12 in rather mean in line, short,
white, tubercles rather large but inconspicuous.
At end of stage shiny opaque whitish, feet
about equal, segs 3-annular, setae obscure.
Shed May 6 Hd .6 bilobed, shiny greenish testaceous
ocelli black, head slender, whitish green
opaque, seg. incisures as white folds, 14 distinct,
no marks but very faint white lat. line
feet 7-8 smaller than the rest. Nocturnal time
white. Tubercles head like, setae fine, 18 & below
lower edge of opercle.

Shed May 8 Hd 1.2 like like scoliiform, soft green, setae
fine, incisures deep, folded, body
moniliform. A. d. 1 sd narrow dusky black
line with 2 ends sd whitish edged above.
18 at 8 middle, 6-10 below lower corner, 11 1/2 to 15, 12 below
middle of middle. Setae dusky. 6 ocelli.

Shed May 11 Hd 1.8 soft yellowish green a sd pale
line edged below with greenish-black, 5 annular
Shed May 14 Hd 2.6 yellow, annular but clearly
below middle of middle 6-10 clear soft green
with single sd line, setae, also the black below

739

Black mites on Carpinus eaten John Wd.
Web of leaves, late then off at base and
annular a partial web lined tube ^{plate 1.1}
when to this. May 8. Hd. shiny black 1.2
mm. Segs 2 annular black or white feet a
dusky purplish, c. d. brown black cut
by 3 pale lines. Tubercles small, black
distinct, setae long pale. 18 or very close,
in line, but from separate minute tubercles,
1 a short sole then 18. On 3 it is a mean
marked, forming a large tubercle.

Shed May 9 Hd 1.7 dull black, shagreened, 6
brown black, pale centrally, c. d. very large
not strongly convex, all light brown with pale
central line. Body dull red-brown, shagreened
slightly, dusky blackish except at the ends.
Anal plate diffusing blackish spotted. no work.
Tubercles small, convex, 18 and 19 approximate
on sd ridge but not distinct. Setae long, dusky
11 to 15 on a large tubercle. Walker's wide
cone of dirt in a loose web around the spun
irregular leaves.

May 16 spun up end of cone forming a closed pod
of dirt in the web.

Pod in June but boys broke open
the box and smooth host)

740

Green larvae in a web on willow; single
 Coln John Ind. May 9 $1.5 \pm$ shiny black,
 line above mouth & base antennae white.
 Body ^{translucent} ~~opaque~~ white green, 8 greenish yellowish
 Csh black, dilated centrally and pale green
 on front edge, tubercles of a also black.
 Thor feet 2, 3 black, 4 green, 5 anal pl.
 Setae long, rather coarse, white; 10 and 11
 united; tubercles conical, glassy, not
 conspicuous though moderate size.
 Anal vessel a dark line.

Reported May 13 - (9 common)

(On ~~extensive~~ ~~at~~ ~~line~~ not mentioned)

10 E

Reared 77 years by Mr. Cockrell, Wash DC. May 15 '99
 Hd 1.6 mm pale testaceous not shiny, eyes black
 narrowly. Antennae rather rudimentary.
 Body straight, segs. 6-annulate, small color
 tubercles on 2d and 4th annulets. Feet 6-11
 translucent whitish green, a distinct greenish
 white line of edge of d vessel 3-12,
 last behind is a general white shade of
 12-13, pulsating. A distinct white stig.
 band 5-10 and 11, straight, rather broad.
 Anal plate rounded, pulsed on the edge,
 no propiatory prongs. A slight blackish
 shading on the thoracic sv ridge.

atomacera desim skin
July 2/99 10 F

Ranking slips on large-leaved Desmodium
Rosalyn Va. June 24 1899. ^{back to} On or near in leaf
Hd. ⁱⁿ round, brownish green, shiny, ocellus, black spot
slightly retracted; antennae rudimentary. Body
overlaid flattened, sv region protruding, fluted
feet 6-12, 13, rather slender. Segs with four
rounded areas like short tubes on feet $\frac{1}{3}$ of
seg. sd, lat, stig (feet) s-v. There are black
cellules, dark edged erect tubes from the top of
which a round deep socket. Before the sd on
annulet 1 a tubercle with seta; also before it
on annulet 2 are 2 tubercles (in one annulet)
Below the sd & dorsally is a large tubercle
with 1 seta. The stig rises from upper edge
of a tubercle with 1 seta. Sv from a large
tubercle forming projection of s-v ridge on
which are several setae. feet with small
setae. all the tubercles are shaded with
dusky black except in their center.
Segs obscurely 2 annulate, the annulet

minutely granular in the center.
Body otherwise green, shiny, smooth.
The glandular tubes form a row on anal,
edge of each and foot. ^(ie m/s. anal fl. is smooth) on anal plate
Hd. pale brown eye black. Body more
but more yellowish, yellow except for
the green feet, the tubercles only very
faintly shaded, nothing conspicuous but
the black mottled tubes in 12 rows which
make the larva look short spiny. The
feet stumpy, thinner a little underneath
Hd. 6 Same. 2 annulate. hemispheres yellow
feet green, shiny; spines black mottled.
June 25 Spins on ^{brown somewhat} irregular loose cocoon
of yellowish, reticulate silk with
mottling. Scutellum tubes shortened.
Died July 6 1899 ♀♀

Cent July 30 1899

10 G =

Sarcophila on plant like fine weed. Gophers
2. J. July 10 1899; many on one plant, flat on
venter on under side, eating whole leaf.
Hd 1.3 whitish a black patch on vertex, a
cresting behind each eye and a dusky one
on top of clypeus, mouth brown. Hb higher
than wide, apex slightly pointed, antennae
rudimentary, a slight white cord. Body
flattened below. Feet all small, abd 6-12, 13
Segs obscurely but regularly 6-annulate.
Venter a little indented, the sides fluted,
2 slightly elevated in front with a notch
in center; anal plate rounded, all plates
white, almost as if with a bloom, trans-
lucent, the green food showing through in
marks at all. Dorsal obscurely green.
Hd 1.1 and .7 in last black rounded almost
touching; body same. Hd 6 in marked difference.
All antennae 1.3 shiny whitish, coracel border eye
black, body brown, shiny, slightly yellowish
fading in d. annulate; no marks.

.25 .34 .47 .65 .9 700
Sclerocerus gabriellae Ashm
Dut Aug 4 1899 79
Hd .5 same 10 H

Another out of mine
was brought up and
cylindrical, all feet
seen on 6-11 and also
dorsal plates, greenish
on 12-13.

Leaf miner in purslane, Bedford L. J.
July 21 1899. Hd .65 rounded, a little higher
than wide, black, the region about mouth
pale. Thoracic feet short, distinct and
spreading marked with black, visible
distinct from lower side of mine. Body
colorless or faintly yellowish, the food
in alternative canal green. 2 dark
spots on venter of thorax (eye black, an-
tennae rudimentary). Segs 3 annulate with
small blackish tubercles on each annule
1 on 1st, 4 on 2nd mostly black spines, 3
on 3rd and a few on 5th folds. Abd feet
very small and short, apparently on 6-12
and 13, though these on 11 & 12 are broad
or distinguishable. Anal plate transverse
dusky black. One came out to start a new
mine. Abd feet 6-11, none on 12 & 13.
Hd .35 same but venter faint; head dusky brown
Hd .25 same July 23 Hd .9 colorless whitish, ocellus
black. Body all green, no marks, feet
greenish brown the coracel border absolute black
5-11 only. 12-13 only. The feet all
abd 12-13. Dorsal dark. Spines small.

IIA

Lyda on plums, G. M. Dodge, Louis-
iana Mos, entering ground about June 1, 1900.
Hd round, ocherous, faintly green
tinged; long antennae and eye
black. Body green, not shining,
4 annulate, subventral fold broadly
ocherous, 6th, the feet, subanal
plate, 2 quadrate patches on an-
anal plate and anal styles
black. D. vessel darker green.

II B

Sargassum nematodes on Alder D.B.
June 7 1900. Abd feet slender 6-11,
short & puffy 13. Segs 4^{8.5} annulate.
Hd 18 shiny vivid orange red, eye
black. Body shiny bronzy greenish
black dorsally, olivaceous green lat.
& ventrally but the large tubercles
black. The feet except joints, abd.
antennae & anal pl. black. A series
of median ventral black blotches, anal
feet olivaceous. No tubercles d, but
setae on 2^d & 3^d annulets, 1 annulet large
2^d high. 3-5 small; 5-v a large tubercle
behind spiracle and one on each
5-v fold & one above feet before.
Obs June 23-25 1900

11 C

Gregarious Vermatids on black brick
Strong Man Mt, Va July 31, 1900.

Hds 2.1 high round flat before & with
4 dentic below & 2 above, shining black
Body cylindrical, feet small 6-11, 13
Shin black anal prongs remote.

Sep irregularly 4 annulate, setae on 2-3rd

Dorsum shining black to spiracles
narrowed at neck anal pl deep

black. Subventer translucent yellowish

with black mottles on both s-v fold

Venter on each seg blackish black 2

front but diminishing in a D and the

post edge all trans yellowish

The feet black except at joints.

Tracheal line yellowish. Spiracles brown

dark. Aug 2 Hd 2.5 30 but the

feet all pale and no black on s-v

fold.

12 A

Solitary Vermatids on narrow leaved
Cotton-wood Golden Col, May 29 1901

Feet 6-11 more 13. Hd round, green, fine
brown puffed on water end in D, ocellus
black, antenna & darkly spotted, obsolete.

Body large, 6 annulate, 2 set large

Translucent green, not shiny, dorsal

darken. Tracheal line faintly whitish

the venter. No prongs, the anal pl.

a little angled at corners.

May 31 Same, rather more shiny

These certainly came out through labels
was in different jar. May 1902

12 B

Leaf miner in cottonwood, Denver Col
June 1, 1901 Larva, blotch mine on margin
of leaf. Ant. 1st rounded pale between
Δ broad almost round shaped; yellow black,
anterior horn, ant. short. Body robust. Flat
ventrally, more arched d. thor. = little longer.
Scales whitish, testaceous tinted, a dirty patch
d. on abd segs. The feet short pale. Ab. 5-12, 13.
In mine 1st flattened, rounded, apex under a
Δ broad, but shaped below, the upper part small
and abruptly rounded off. Ant. short, indistinct
3-jointed, conical; color brownish overlaid with
brown shading, scales brown black, fine dark
blackish ring robust, uniform, flattened ventrally but
quite thick, thorax a little thicker. 13 slightly
smaller, rounded. Cth indistinct 3-jointed
one rounded at joint, corners, blackest at edge.
No anal pl. or prongs. Smooth, shiny. Spines
white from joint, joint obscure green. The feet
3-jointed with a claw black, small. Principally
laterally, a ventral black band on 2 constituted
centrally; a rounded patch on 3-5. Feet reddish
marked before by deep black brown one on 6-12
a black circle surrounding the coarctated part of
13 Labrum black w 1.0 mm

12 C

On 35 fingered lupine (993 plant) Platte
Canon Col, June 7 1901 (all open in
elliptical yellowish net with coronae on
the plants; larvae not visible in cocoon)
1st greenish brown shaded, a diffuse
black patch in Δ and one at side post.
Feet on 6-10 etc, particularly on 11 as very
shrunken in J. Green with 3 rows of
small round pale central black
tubercles per seg. middle row highest
and 4 line ventrad. S-V region more
yellowish green, all evenly tubercled
down to feet. The feet shaded blackish
and pl an approximate lateral
one etc.

Ant June 15 1901

12D

Edge cater solitary on willow, Platte
Cannon Col., June 7 1907. Feet 6-11, 13
Hd and green. ocellus black. Body
rather straight with round mouth
large anal flap. Feet shiny whitish
green with a whitish strip. Stripes
composed of green on the tracheae
Absence of 6-annulate. No marks
Feet all green.

June 11 Nov & J. Daint blackish on
stripes.

12E

Ingrum on 2-needled pine, Cheyenne
Bulch, Golden, Col., June 10, 1901

Hd pale brown with a broad black bar
in Δ . Ocellus rudimentary and
mouth black ringed. Feet 6-13, segs fine
6-annulate, the feet black at base. Slightly
a needle horned. Eucnist white
a faint gray green sd but not a
narrow black bar. ^{later obsolete} Upper sd
fold with a faint gray green stripe. It is
a row of many black dashes along base
of feet. Body taper behind. Pedal
dashes form a straight line.
This June 17 (ultimate) Hd whitish con-
nued, no spot eye black annulate brown.
Body many whitish green d. a somewhat
geminate d blackish line and broad lat.
band. S-R all across the entire
stripe gone.

12 F

Flat a ventral on *Amnion* Wilson's Golden
col. June 19 1901. Hd round green
green white shaded eye black.
Rostr 6 annulate long, rather stiff
feet 6-11, 13, short and fleshy rounded
white green with a white sd line
and a broken dotted lat. one. Tra-
cheal line slightly white spotted.
Skin smooth and a little shiny.
The feet small tipped.

12 G

Green ticks from like Muller head
Oreocarya glomerata (Muller)

Leaf miner in "a *Labiatae*" (detent N.S. Day) ¹⁹⁰¹
Golden col. July 1, 1901. Head green.
Hd 1.0. round, feet, apex under 2 like
a turned but a shield shaped broad
and 1 black ocellus. Body robust, soft,
white, Prof tufted just. faint, smooth
showing 3 annulate the feet dentate
a circulum shaded ventrally in c.
The feet close together, projected lat.
annulate. No abd. feet or lat
slight rudimentary lat. placed on venter
on 6-12 & 13 (?). Hd. bottom shaded
in brown on ocellus & mouth Prof and
white unmarked.

Before lat. Hd all black but antennae and
epistoma. Body white, green from food
2 faint black spots, anal pl. large black
Sep 3-annulate slightly hairy. The feet
black tipped a dark shade each side 1
ventral plate of c and a ventral spot
of 3 & 4. Abd feet rudimentary.

12/4

8/ on 1064 plant. Ld. midrib whitish
 very black. Red granular mass
 just. flat on back. Just 6-13. Sps
 to annulate, d. usual narrow green
 a whitish stig. strip.

12 I

Mosquito egg on rain water barrel Bellport
 N.Y., Aug 12 1901. In elliptical mass, more
 pointed at one end 4.5×2 mm. The egg
 head erect, the top of the mass formed by
 them pointed small ends, the sides 1
 and a little oblique, fringed by a row of
 irregular spherical cells at the lower
 surface of the egg. 9 diam of egg. Single egg
 elongate, cylindrical, tapering to the upper
 outer micropyle and the other larger, and
 sub-truncate. Smoky brown, darker at
 the pointed end, smooth, without distinct
 striae, the mass blackish brown. Edge
 cells pointed blunt at one end, more or
 less flattened at the other, a black point
 at the tip. Surrounding a ring from which
 radiate converging striae. Surface granular.
 Aug 21, seem to be old egg. But more white
 have no edge cells (= covers) egg rounded
 below with a black point and radiating
 converging, tipped by a small whitish cap.
 Eos bacteria. All died when put in
 the 120 water.

Culex purpurarius

12 J

Culex larvae in stream above wheel dam and in spring pool. Bellport 20 Aug 26 1901. Springy in stream, more common in pool. With Anopheles in both cases. White ringed antennae position similar to pergeus, perhaps a little deeper in water from large tube. Larvae more sluggish, less easily taken to bottom. Hd large, flattened, sharp as in pergeus but broader. Larva in proportion; antennae large, the basal joint thick, long, white, black at base, normal joint black, more slender. Eyes black, prominent, rounded to a point; no transverse pale line, smooth, brown. In color a shade or distinct brown black about corners of head. Thorax stout, wide, at maturity swollen like a thick ring, greenish or green. Abdomen slender, uniform, mid seg as long as 2nd abd. with 11 slender spin-like spines and a tuft of long hair. Behind about area. This body slender as long as 1/2 of abd. Abdomen truncate at top and wide with tuft of fine hair just. abd color is greenish, centered by the dark al. canal and silvery tracheal tubes. Hair tufts on sides subequal in all segs.

One in the Taffy Pt pool Sept 18 found

12 K

(over)

Cold early spring Taffy Pt place - Culex all 12 J
Found in river, cold but not so cold - many 12 J, few 12 K
Narrow running pool W Bellport - all 12 K

Culex larvae rare in stream above wheel dam with Anopheles and 12 J. Plate nearly to surface and not deep. Difficult to distinguish from Anopheles in some positions. Likes to hide under the Lemna. Sluggish, often not moving when actually touched. Hd oval, longer than wide, proportionally small, joint before, the antennae small, divergent, all brown black. Thorax slender, not annular, flattened to side of body dorso-ventrally. Abd. uniform tapering a little post; last seg. annular with 4 fingers. An. like with short, not longer than 2 segs. from under at top one with 4 distinct black spots, black as long as width of tube. All yellowish. Oesophagus, al. canal dark edged by silver tracheal tube. Hairs black, the thoracic ones equal, long, those of first 2 abd. segs also long & about like thoracic but the rest very short & inconspicuous. Tuft of anal segments long. Hds. .6 mm. More in occurring warm pool 1 mile W Bellport all Culex 12 K (some Anopheles). Hds brown the little ones black. Larvae heads found very common but not so far as Anopheles. After head up to feed at surface.

Manitacensis Cophitarsus O S

near Coquille's camp Oct 2.

12 L

Fly pupa just like mosquito one but very large, Spring Pool, Bellport, Aug 1901. Has slender funnel-shaped thoracic air tubes without gills, anal fan-like paddles

12 KA Egg in warm pool with 12 K. A.D. mass floating on the water but about $\frac{1}{2}$ submerged. Egg erect, micropylar end down, closely placed but not apparent. Mass about 2 mm. Egg elongate cylindrical bluntly rounded at large (micropylar) end, minutely without central elongation tapering considerably to other end; smooth, the anterior $\frac{1}{4}$ roughly granular with large protruding granules. Dark brown shading to black at apical fourth. Hatched Aug 29. 1st inst. 1st inst. pale, some black, w. about .2 mm. Shed Sept 3. Hd. 3+ mm. at first pale with black shade above. Hair of thorax at 1-2 and segs long black, others as short as to be almost invisible. Like next 12 K. Hd. turned black the next day. Sept 10 Hd. 4 all larvae

12 M

subconsolidated

Red worms in blacksmith's water barrel Bellport N.Y. Aug 1901. In a tube-shaped case of black mud, loosely spun together, rarely swimming free in water. Wriggle with a slow squirming motion. Hd. a little lighter than body, flattened, rounded, oblique, clypeus large, D. high; eyes in two angular small patches, antennae rudimentary, simple; labrum distinct with two simple hairs; a few single hairs on head. Body slender elongate, last 2 thin, joint gently enlarged on ventral side of prothorax and a little above prothorax bearing a large tuft of slightly curved spines, the 8th abd. seg. a group of long thick curved subsegmental respiratory tubules; a tuft of small prolegs on the last segment, anal tip curved with a ring of recurved spines. Color bright coral red, translucent, ab. canal whitish, more opaque. With a group of hairs. Pupa with head nearly free, thorax above the wing cases faintly curving the long coiled leg cases. A dense bunch of fine branching respiratory filaments on prothorax. Abdomen long, tapering, gently curved. Pupa requires to shake filaments. Larva & pupa winter breathe, do not come to surface.

12N

Case worms in ocean and under *Terminia* leaves in debris like 12M but smaller and all colorless white transparent. in most any stream or pool. Bellport N.Y. Sept 1901. Hd rounded, flattened, free but somewhat retracted, antennae slender distal, eyes of two contiguous black spots. Body slender, filamentous, undulating. A ventral fold or protrusion bearing a tuft of several spines. Four and five shaped processes on a thin whitish translucent, at caudal end a spine in blackish ascending to foot. A double tuft of hairs from caudal segment dorsally near top.

Tufts in a rather rough case similar to the larval one. Shaped as in 12M the case forming a moderate prominence abdomen slender tapering ending in a ventral flattened laminate projection the last segment bearing a long tuft of colorless hairs, softest ~~in the case~~. Translucent, pale greenish, the thorax yellowish, eyes dark; wing and legs case very transparent a tuft of few rather coarse filaments in protrusion.

12O

Culex larvae in fresh water marsh at Taffy Point, Bellport. Marsh was dry a few weeks before but filled again by recent rains. Full of flocculent red sediment. Finely irregular, easily descending but not retreating down many minutes. Dark colored head more or less infuscated, air tube short, ovules centrally, infuscated. Body dark, largely from food. Eat the flocculent brown sediment converting it all into pellets of excrement. (It has no aquatic form)

(mixed)

Diagnosis of Culex

Breathing tube long and slender, linear
Antennae white ringed, head wide --- 12J
Antennae not white, head not wide --- 12I
Breathing tube short, conical or fusiform
Anal finger rather long, distinct; tube --- 12O
Anal finger ^{and anal ring infuscated} very short, obscure, tube --- 12P
anal ring not infuscated

12J Culex consobrinus terricola

12I Culex pungens

12O Culex ~~stomatopoda~~ sylvestris (mixed)

12P Culex sollicitans

12 P

Culex larvae in water mostly rain but
evidently had been washed into
by last storm (Sept 6th). Taste not
rankish but not perfectly fresh - a
slight trace of salt. Amagansett 2 I
Sept 16 1901. Mostly all pupae, a few
larvae, very lively and staying down
a long time, longer than the pupae.
water in a low reedy or grassy marsh,
evidently not permanent water.

Culex sollicitans emerging abundant
from pupae and in pure swarms
in the grass. Not biting however.
(mixed)

12 Q

Patchen plant larvae (*Aedes smithii*)
from Patchen, New Brunswick, N. J.

Oct 10 1901. Hd rounded, fringed.

fringed eyes very small a round black
dot, not transverse; mouth lobes
large but not long, anterior small
slender, without peristyles small trip
and hair small, pale brown, weakly
but distinct & uniformly colored. White
band of hd. just behind eyes then narrowing
gradually to antennae. Coloration brownish,
thorax faint brownish. Thorax gradually
a little wider than long, square angled,
the 3 segs rounded apically and equal.
Leg hairs long, equal, anterior & anal
one very small. Body slender, subcylindrical,
segs equal; leg hairs long on
all segs the long hairs diminishing &
narrower but not in length post.
Sd hump short, of 3 or 4 bands. Last count
of 8th seg a single row of short teeth
an hump shorter than 2 abd segs rounded
narrow at tip with 2 rows of hairs in
upper ^{2 on lower} anterior. anal seg short, broad
shaped, with at tip with 2 large paddle
like processes as clear as glass and con-
taining tracheal filaments reaching to
the end of tube. Sd & last ^{also} hump
hairs terminally on last seg. No ventral hump

12 R

In muddy rain water. Middle containing Anticella, Diatom & other Protozoa with the middle Amphipods on two bath near canal about Blumbers IS, Ind. Oct 12 1901.
 Shape of sylvestris fup. Hd round flat, narrow before. Eyes large transverse; pale brownish, dark brown on outer. Antennae long (as long as body) eye & base and slender, uniform outer 3/4 black, tips small at middle, the base 3 & 4 finger, smooth much normal. Thorax moderate rounded, bulbous; body cylindrical thick, seg. and slight bulging, gradually a little smaller post. Hair abundant & unequal stiff, short, the rosettes over about 1/2 width of thorax and ones in post occur are 1/2 width of seg. less visible (fewer post). Tube brown, outsp. for about 3x as long as wide, double section below narrowed; each comb of fine teeth each tooth with flat like base & spines. Last seg 3/2 as long as wide. Horn rings d. Knift double normal, ventral hook large but not long. Finger slender small inconspicuous. (desc. in water with lens)

13 A

Larvae on ash D.S. mature and all over trunk May 13 1902. They are like S. vanda but Mr. Marlatt says different. Hd 1.6 round, narrow at mouth of open slightly shiny white. Eye narrow black, mouth and base. Body flattened ventrally, robust, rather highly arched d. ends abruptly rounded. Segs rather fine 8+ annulate, white, opaque d., the d. green & narrow transverse line, side translucent, 2 and 3rd fold broadly ochreous yellow. The feet small, abd 6-13, all pale. Last stage same but streaked with smoky and slightly shiny. Hd smoky shaded.

